APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR		ATTORNEY DOCKET NO.
09/106,784	06/29/98	PEDNAULT	E	Y0998-256

LM02/1217

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EXAMINER
BRODA, S

ART UNIT	PAPER NUMBER
2763	

DATE MAILED:

12/17/99

Please find below and/or attached an Office communication concerning this application r proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

	Application No.	Applicant(s)
	09/106,784	Pednault
	Examiner	Group Art Unit
	Samuel Broda	2763

[X] Responsive to communication(s) filed on _29 Jun 1998_

[ ] This action is **FINAL.**

[ ] Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire _____3_____ month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

[X] Claim(s) _1 and 2_ is/are pending in the applicat

    Of the above, claim(s) _____ is/are withdrawn from consideration

[ ] Claim(s) _____ is/are allowed.

[X] Claim(s) _1 and 2_ is/are rejected.

[ ] Claim(s) _____ is/are objected to.

[ ] Claims _____ are subject to restriction or election requirement.

Application Papers

[ ] See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

[ ] The drawing(s) filed on _____ is/are objected to by the Examiner.

[ ] The proposed drawing correction, filed on _____ is [ ] approved [ ] disapproved.

[X] The specification is objected to by the Examiner.

[ ] The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

[ ] Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

    [ ] All [ ] Some* [ ] None of the CERTIFIED copies of the priority documents have been

        [ ] received.

        [ ] received in Application No. (Series Code/Serial Number) _____ .

        [ ] received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    *Certified copies not received: _____

[ ] Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

[X] Notice of References Cited, PTO-892

[ ] Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

[ ] Interview Summary, PTO-413

[ ] Notice of Draftsperson's Patent Drawing Review, PTO-948

[ ] Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

DETAILED ACTION

1.   Claims 1-2 have been examined.

Information Disclosure Statement

2.   The Application contains references to the following papers:

(1) Quinlan, "Unknown attribute values in induction";

(2) Singh, "Learning Bayesian networks from incomplete data";

(3) Dempster et al, "Maximum likelihood from incomplete data via the EM algorithm"; and

(4) Domingos, "Unifying instance-based and rule -based induction."

The Examiner has been unable to locate a copy of these documents. As these documents appear

relevant to the instant invention, Applicant is required to provide a copy of these documents

along with a completed "Information Disclosure Statement by Applicant" ("IDS"), in any

response to this Action.

Additionally, the Examiner located a citation and abstract to Apte et al, "Decomposition

of heterogeneous classification problems." Applicant is listed as one of the co-authors of this

paper. The Examiner has been unable to locate a copy of this document. As this document

appears relevant to the instant invention, Applicant is required to provide a copy of this

document along with a corresponding reference on the completed IDS, in any response to this

Action.

Drawings

3.   This application has been filed with informal drawings which are acceptable for

examination purposes only. Formal drawings will be required when the application is allowed.

Specification

4.   The disclosure is objected to because parts of the Specification are written in a form

suggesting that multiple inventors should be named in the Application. For example, the

following phrases appear in the Application

Page	Phrase
1	"Our work considers . . ."; ". . . we have discerned . . ."
2	"We have also discerned . . ."
7	". . . we have also discerned . . ."; "we have now discovered a methodology"

As noted above, there is at least one published paper that appears to contain relevant

information to the Application, and it was co-authored by the Applicant along with 5 other

individuals.

Appropriate correction to the Specification or to the list of Applicants is required.

Claim Rejections - 35 U.S.C. § 101

5.   The following is a quotation of 35 U.S.C. 101:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5.1   As discussed below, claims 1-2 are rejected under 35 U.S.C. 101, as failing to

meet one or more guidelines enumerated in "Examination Guidelines for Computer-Related

Inventions" (the "Guidelines"), published in the Federal Register and available on the World

Wide Web at:

> http://www.uspto.gov/web/offices/com/hearings/software/analysis/computer.html

5.2   Product claims 1-2 are rejected because the underlying process invention

comprises an abstract idea.

5.3   Regarding Claim 1, this claim is directed to "A program storage device readable

by a machine, tangibly embodying a program of instructions executable by the machine to

perform method steps for constructing predictive models", and the steps recited in Claim 1

describe mathematical operations comprising the abstract idea of generating models that account

for missing or otherwise unknown data values.

For the purposes of examination, the "device" of claims 1-2 will be read broadly to

comprise a product claim that encompasses any and every computer implementation of a

process. Neither the detailed description of the invention nor the drawings supply any tangible

description of a computer implementation of the invention.

In this situation, the following paragraph in the Guidelines at IV.B.2.(a)(ii) appears

controlling:

If a claim is found to encompass any and every product embodiment of the underlying process, and if the underlying process is statutory, the product claim should be classified as a statutory product. By the same token, if the underlying process invention is found to be non-statutory, Office personnel should classify the "product" claim as a "non-statutory product." If the product claim is classified as being a non-statutory product on the basis of the underlying process, Office

personnel should emphasize that they have considered all claim limitations and are basing their finding on the analysis of the underlying process.

[Emphasis supplied.]

Therefore, Claim 1 is rejected as being classified as a non-statutory product because the underlying process invention as claimed by Applicant is non-statutory. The method steps in Claim 1 do not: (1) recite data gathering limitations or post-mathematical operations that might independently limit the claims beyond the performance of a mathematical operation; or (2) limit the use of the output to a practical application providing a useful, concrete, and tangible result.

5.4   Regarding Claim 2, the limitations supplied in this claim does not: (1) recite data gathering limitations or post-mathematical operations that might independently limit the claims beyond the performance of a mathematical operation; or (2) limit the use of the output to a practical application providing a useful, concrete, and tangible result. The analysis and conclusion regarding non-statutory subject matter is identical to Claim 1 above.

Indication of Allowable Subject Matter

6.   Subject to rejections listed above, and based on the prior art located to date and made of record, claims 1 and 2 do not appear to be taught or rendered obvious, and are indicated as allowable subject matter.

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to Applicant's

disclosure. Reference to Pham et al, U.S. Patent 5,970,482 issued 19 October 1999 is cited as

teaching a system for data mining using neuroagents.

Reference to Keeler et al, U.S. Patent 5,842,189 issued 24 November 1998 and U.S.

Patent 5,819,006 issued 6 October 1998, are cited as teaching a method for operating a neural

network with missing and/or incomplete data using a neural network and including a model

uncertainty prediction.

Reference to O'Brien, Jr. et al, U.S. Patent 5,675,553 issued 7 October 1997 is cited as

teaching a method for data gap compensation wherein a model is determined for each data gap.

Reference to Cowell et al, "Sequential Model Criticism in Probabilistic Expert Systems",

IEEE Transactions on Pattern Analysis and Machine Intelligence, Vol. 15 No. 3, pp. 209-219

(March 1993) is cited as teaching Bayesian model building including incomplete datasets.

8.   Any inquiry concerning this communication or earlier communications from the

Examiner should be directed to Samuel Broda, whose telephone number is (703) 305-1026. The

Examiner can normally be reached on Mondays through Fridays from 8:00 AM – 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's

supervisor, Kevin Teska, can be reached at (703) 305-9704. The fax phone number for this

group is (703) 308-1396.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the group receptionist, whose telephone number is (703) 305-3900.

KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER